

Claims

1. Catalyst body with one or more layer elements with cavities which are etched and through which streamable media can flow, such as pores or channels **thereby defined that** the cavities are basically perpendicular to the surface.
2. Catalyst body according to claim 1 **thereby defined that** the layer elements consist basically of silicon or silicon compound alloy.
3. Catalyst body according to the said claims **thereby defined that** the dimensions of the cavities perpendicular to the flow direction of the medium vary.
4. Catalyst body according to the said claims **thereby defined that** the surface of the cavities has a metallic coating.
5. Catalyst body according to the said claims **thereby defined that** the inner surface of the cavities posses a catalytic active coating.
6. Catalyst body according to the said claims **thereby defined that** at least two of the layer elements have alignment marks.
7. Catalyst body according to the said claims **thereby defined that** the layer elements basically consist of electrically conducting material.

8. Method of fabrication of a catalyst body constructed from single layer elements with the following procedure steps:
 - etching of complete pores running through the substrate which basically run perpendicular to the layer surface
 - stacking of equally processed and etched elements on top of each other.
9. Method of fabrication according to claim 8 wherein the etching is performed by deep anodic or photo anodic etching.
10. Method of fabrication according to claim 8 where the etching is performed by a plasma etching process.
11. Method of fabrication according to the said claims 8-10 where additional alignment marks are foreseen on each of the layer elements.
12. Method of fabrication according to the said claims 8-11 where at least one surface is pre-structured by a photolithographic process.
13. Method of fabrication according to the said claims 8-12 where the surfaces of the etched cavities are coated by a metallic layer.
14. Method of fabrication according to the said claims 8-13 where the surfaces of the etched cavities are supplied with a catalytic active layer.

15. Catalytic reactor with a housing including feed and output gas lines for the reactants and a catalyst body inside thereby defined that it has a catalyst body according to the claims 1-7.
16. Catalytic reactor according to claim 15 thereby defined that it is divided into several segments each segment consisting of the described catalyst body according to claims 1-7.
17. Fuel cell system with a catalytic reactor as a reformer and a fuel cell thereby defined that it has a catalytic reactor according to claims 15 or 16.